

WHAT IS CLAIMED IS:

- 1 1. A method for indicating a location of a person with respect to a video
2 capturing volume of a camera, the method comprising the steps of:
- 3 receiving at least one image from the camera;
- 4 determining a location of the person with respect to the video capturing
5 volume of the camera based on the at least one image;
- 6 generating an abstract representation of the person; and
- 7 displaying the abstract representation to the person such that the abstract
8 representation indicates the location of the person with respect to the video capturing
9 volume of the camera.
- 1 2. The method of claim 1, wherein the step of determining a location of the
2 person comprises the step of determining a location of the person's head.
- 1 3. The method of claim 1, wherein the step of determining a location of the
2 person comprises the step of determining a plurality of locations corresponding to
3 respective portions of the person.

1 4. The method of claim 3, wherein the step of generating an abstract
2 representation of the person comprises the step of generating a plurality of abstract
3 representations, each of the plurality of abstract representations corresponding to a
4 respective portion of the person, and wherein the step of displaying the abstract
5 representation comprises the step of displaying the plurality of abstract
6 representations such that the plurality abstract representations indicate the plurality of
7 locations of the respective portions of the person with respect to the video capturing
8 volume of the camera.

1 5. The method of claim 1, further comprising the steps of:
2 determining a location of at least one of another person and an object;
3 generating a corresponding abstract representation of the at least one of
4 another person and an object to produce a second abstract representation; and
5 displaying the second abstract representation to the person such that the
6 second abstract representation indicates the location of the at least one of another
7 person and an object with respect to the video capturing volume of the camera.

1 6. The method of claim 1, wherein the step of displaying the abstract
2 representation comprises the step of animating
3 the abstract representation over a plurality of video frames.

1 7. The method of claim 1, wherein the step of determining a location of the
2 person with respect to the video capturing volume of the camera comprises the steps
3 of:

4 determining whether at least a portion of the person is represented in the at
5 least one image; and

6 in the event that at least a portion of the person is represented in the at least
7 one image, determining that the person is within the video capturing volume of the
8 camera.

1 8. The method of claim 7, wherein the step of displaying the abstract
2 representation comprises the step of displaying the abstract representation to the
3 person such that the abstract representation indicates the location of the person within
4 the video capturing volume of the camera.

1 9. The method of claim 7, wherein the step of displaying the abstract
2 representation comprises the step of displaying the abstract representation to the
3 person such that the abstract representation indicates that the person is outside the
4 video capturing volume of the camera in the event that the at least a portion of the
5 person is not represented in the at least one image.

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1 10. A method for indicating a location of a user of a two-way communication
2 device with respect to video capturing volume of a camera operably coupled to the
3 two-way communication device, the method comprising the steps of:
4 capturing an image with the camera to produce a captured image, the captured
5 image including at least a portion of the user;
6 determining a location of the user within the video capturing volume of the
7 camera based on the captured image;
8 generating an abstract representation of the user; and
9 displaying the abstract representation to the user on a display of the two-way
10 communication device, such that the abstract representation indicates the location of
11 the user within the video capturing volume of the camera.

1 11. The method of claim 10, further comprising the step of receiving at least one
2 image from a second two-way communication device, and wherein the step of
3 displaying the abstract representation comprises the step of displaying the abstract
4 representation together with the at least one image received from the second two-way
5 communication device on the display of the two-way communication device.

1 12. An apparatus that is operably coupleable to a camera, the apparatus
2 comprising:

3 a location determiner, operably coupled to the camera, for determining a
4 location of the person with respect to a video capturing volume of the camera based
5 on at least one image received from the camera, the at least one image including at
6 least a portion of a person;

7 an abstract representation generator for generating an abstract representation
8 of the person; and

9 a video processor, operably coupled to the location determiner and the abstract
10 representation generator, for positioning the abstract representation in an image to be
11 displayed to the person such that the abstract representation indicates the location of
12 the person with respect to the video capturing volume of the camera.

1 13. The apparatus of claim 12, further comprising:

2 a display, operably coupled to the video processor, for displaying the image
3 containing the abstract representation to the person.

1 14. The apparatus of claim 12, further comprising a second receiver, operably
2 coupled to the video processor, for receiving an image from a remote device to
3 produce a received remotely-generated image, and wherein the video processor
4 positions the abstract representation together with the received remotely-generated
5 image in an image to be displayed to the person such that the abstract representation
6 indicates the location of the person with respect to the video capturing volume of the
7 camera.

1 15. The apparatus of claim 12, further comprising a transmitter for transmitting
2 the at least one image received from the camera to a remote device.

1 16. The apparatus of claim 12, wherein the location is an actual location of the
2 person in the video capturing volume of the camera during a video frame processed
3 by the camera.

1 17. The apparatus of claim 12, wherein the location is a relative location change
2 with respect to a plurality of video frames processed by the camera.

1 18. The apparatus of claim 17, wherein the relative location change comprises at
2 least one of a translation and a rotation.

1 19. The apparatus of claim 12, wherein the location comprises at least one of a
2 position and a depth.

1 20. The apparatus of claim 12, wherein the abstract representation comprises an
2 icon.

1 21. The apparatus of claim 12, wherein the icon comprises a geometric shape.

1 22. The apparatus of claim 12, wherein the abstract representation further
2 indicates a direction in which the person should move in order to be located
3 substantially in a center portion of the video capturing volume of the camera.

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- 1 23. A two-way communication device comprising:
- 2 a camera for capturing an image within a video capturing volume of the
- 3 camera to produce a captured image, the captured image including at least a portion of
- 4 a user of the two-way communication device;
- 5 a location determiner, operably coupled to the camera, for determining a
- 6 location of the user within the video capturing volume of the camera based on the
- 7 captured image;
- 8 an abstract representation generator for generating an abstract representation
- 9 of the user;
- 10 a receiver for receiving an image from a second two-way communication
- 11 device;
- 12 a video processor, operably coupled to the location determiner and the abstract
- 13 representation generator, for arranging the abstract representation and the image
- 14 received from the second two-way communication device together in a composite
- 15 image to be displayed to the user such that the abstract representation indicates the
- 16 location of the user with respect to the video capturing volume of the camera;
- 17 a display, operably coupled to the video processor, for displaying the
- 18 composite image to the user; and
- 19 a transmitter, operably coupled to the camera, for communicating the captured
- 20 image to the second two-way communication device.